DOCUMENT RESUME

ED 396 152 CE 071 895

AUTHOR Venezky, Richard L.
TITLE Literacy Assessment in the Service of Literacy Policy.
INSTITUTION National Center on Adult Literacy, Philadelphia, PA.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO NCAL-TR-95-02
PUB DATE May 96
CONTRACT R117Q00003
NOTE 32p.
AVAILABLE FROM National Center on Adult Literacy, Publications, 3910 Chestnut Street, Philadelphia, PA 19104-3111 (order no. TR95-02).
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adult Basic Education; Adult Literacy; Databases; *Educational Policy; Functional Literacy; *Information Needs; *Literacy Education; National Surveys; Needs Assessment; *Program Effectiveness; Program Evaluation; Public Policy; *Student Evaluation

ABSTRACT

Literacy policy has often developed independently of other social and employment programs. As a consequence, literacy tends to become an end unto itself, and assessment is directed more toward academic, archival ends than toward policy evaluation. Many justifications given for large-scale literacy programs are not based upon empirical data. Foremost among these justifications are the projected skills mismatch between the job market and new entrants to the work force. Additionally, the target audience for literacy training is often greatly inflated. The basis of most recent assessments of adult literacy is functional literacy, but there are concerns that it fails to provide a basis for predicting abilities in new literacy contexts and it lacks a basis for selecting specific assessment tasks. Rather than abandoning functional literacy, an attempt should be made to support it both theoretically and empirically. Questions have also been raised about the effectiveness of different literacy programs and limited experience in measuring literacy program performance. The need for an extensive database to support literacy policy becomes imperative. Perhaps the most important lesson to be learned from national literacy surveys is that they have limitations for policy formation and evaluation. What is needed in most developed countries is more focused information on the groups who need assistance and the effectiveness of programs instituted to assist them. (Contains 41 references.) (YLB)

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NATIONAL CENTER ON ADULT LITERACY

LITERACY ASSESSMENT IN THE SERVICE OF LITERACY POLICY

Richard L. Venezky
University of Delaware

TECHNICAL REPORT TR95-02
May 1996

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UNIVERSITY OF PENNSYLVANIA
3910 CHESTNUT STREET
PHILADELPHIA, PA 19104-3111
PHONE (215) 898-2100 FAX (215) 898-9804

The National Center on Adult Literacy (NCAL) was established in 1990 by the U.S. Department of Education, with co-funding from the Departments of Labor and Health and Human Services. The mission of NCAL addresses three primary challenges: (a) to enhance the knowledge base about adult literacy; (b) to improve the quality of research and development in the field; and (c) to ensure a strong, two-way relationship between research and practice. Through applied research and development and dissemination of the results to researchers, policymakers, and practitioners, NCAL seeks to improve the quality of adult literacy programs and services on a nationwide basis. NCAL serves as a major operating unit of the Literacy Research Center at the University of Pennsylvania.

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AUTHOR

Richard L. Venezky. Dr. Venezky is currently Unidel Professor of Educational Studies and Professor of Computer and Information Sciences and of Linguistics at the University of Delaware. He is the founder and director of the Educational Technology Laboratory at the University of Delaware and Chair of the Research Advisory Committee for the U.S. Secretary of Education's American Initiative on Reading and Writing. During the 1994–95 academic year, he was a Benton Visiting Scholar at the University of Chicago. From 1990 to 1996, Dr. Venezky served as Co-Director for Research and Development at the National Center on Adult Literacy.

LITERACY ASSESSMENT IN THE SERVICE OF LITERACY POLICY

Richard L. Venezky
University of Delaware

Abstract

Literacy policy has often developed independently of other social and employment programs. As a consequence, literacy tends to become an end unto itself, and assessment is directed more toward academic, archival ends than toward policy evaluation. Although the need for improved literacy training for individuals and identifiable subpopulations in the United States is well established, many of the justifications given for large-scale literacy programs are not based upon empirical data. Foremost among these justifications are the projected skills mismatch between the job market and new entrants to the workforce. Additionally, the target audience for literacy training is often greatly inflated, usually by ignoring the age distribution of out-of-school persons who lack a high school diploma or equivalent. New assessment procedures should be built around the long-term objectives of literacy training—economic independence, social integration, and personal satisfaction. These procedures should also provide information for evaluating different policy options.

INTRODUCTION

Literacy assessments like the Canadian Survey of Literacy Skills Used in Daily Activities (LSUDA), the U.S. National Adult Literacy Survey (NALS), or the just completed International Adult Literacy Survey (IALS; OECD, 1995) should be motivated by clear sets of policy objectives. These objectives, in turn, should derive from repeated cycles of information gathering and policy formation, with refinement of methods and convergence of objectives in each cycle, leading systematically to a focused national or international survey. In the real world of unemployment, AIDS, and cabinet shakeups, however, literacy policies often become adjuncts to other social, political, and educational interests, and the information base for literacy policy formation becomes weak, outdated, and cursorily analyzed. It is, perhaps, a compliment to the policymakers of the major industrial countries that so much has been accomplished with adult education in the past decade in spite of severely limited knowledge bases in most countries and equally impoverished analysis procedures. Nevertheless, a chasm continues to exist between literacy policy and literacy assessment in those industrialized countries that have produced evidence of both. It is the goal of this report to explore this gulf, particularly in the United States, but with the intention of proposing how it might be avoided or closed in other countries.

POLICY JUSTIFICATION

Literacy has been an interest of the federal government in the United States at least since the 1880s when Senator Henry W. Blair of New Hampshire proposed federal aid to education based upon the number of illiterates in each state who were over the age of 10. More recently the Adult Education Act (P.L. 100-297), inter alia, provided federal funds to the states for adult basic education (ABE), adult secondary education (ASE), and English as a second language (ESL). President Bush, in America 2000, and President Clinton, in Goals 2000, targeted adult literacy as a national educational goal. In recent legislation, as well as in earlier debates, literacy has been offered as a proxy for basic education, including communicative competence in English for those who are not native speakers of English. Although this report will continue to emphasize *literacy* in conjunction with policy formation, it is important to interpret this term in a broad sense, covering all that is incorporated in adult basic education today. Literacy in a strict sense is inadequate to accommodate the breadth of personal, social, and economic goals expressed in the justifications for federal adult literacy programs. Definitions of literacy adopted by programs and surveys, because of this disjunction, often fall into rhetorical excess, invoking components that are seldom taught or assessed (Venezky, 1990).

The logic of federal literacy policy derives first from Constitutional prerogatives that center on the health and welfare of individual citizens, and by extension reach social and economic concerns of the nation itself. Policymakers, through a variety of different types of evidence, have been

convinced that a significant number of citizens lack basic education and that as a result of this deficiency, various problems of national concern exist, centered on equity, security, and economic competitiveness. Foremost among these are the following:

- *Intergenerational poverty*. Many families, including a disproportionate number of minorities, have experienced intergenerational poverty and have little hope under their present circumstances of achieving economic independence. These families tend to be dependent upon the welfare system for basic necessities, to have children out of wedlock, particularly at ages when the mothers should be completing their schooling, and to have limited participation in civic and community activities.
- *Integration of immigrants*. Related to intergenerational poverty is the plight of immigrants who do not speak English sufficiently well to communicate in daily life and in the workplace. The integration of these people into the mainstream of American life requires that they learn to speak English well and that they acquire basic skills if they did not have them when they came to this country.
- *Recidivism of released criminals*. Basic skills among inmates of correctional institutions tend to be significantly lower than those of the general population, and that fact is often cited as a cause of recidivism (Ross, 1990; Ross & Gendreau, 1980). The current emphasis on educational programs, particularly literacy programs, in correctional institutions is driven in part by data that suggest a lower recidivism rate for those with higher educational attainment (Newman, Lewis, & Beverstock, 1993). Related to these facts, there is a widespread belief that crime rates will be reduced if educational levels can be raised, particularly among interurban poor.
- *Workforce development*. A number of reports over the past decade have projected a rapid decline in low skill jobs and an equally rapid increase in the skill requirements of existing and projected jobs (e.g., Johnston & Packer, 1987). These reports, coupled with uncertainty over the quality of the U.S. educational system (e.g., National Commission, 1983), have created a concern for the ability of the U.S. workers to contribute significantly to America's global economic competitiveness.

Although other basic justifications for federal literacy policy might be adduced, including the strengthening of democratic ideals, the dignity of individual citizens, and the survival of political institutions, the issues outlined above are the ones most often cited as justifications for literacy funding and are also defined at a level of specificity that can easily be translated into both survey and policy needs.

It is important to note that these four factors are highly interdependent. Without marketable skills, including English language proficiency, poverty is a probable outcome. For the incarcerated, as well as for immigrants and native poor, the route to economic independence is through gainful employment, which requires both entry-level skills and then acquired competence. Literacy, even in the broad sense, is an enabling skill. By itself

it has little market value. It is, like a password, an entrée to the types of job training that can lead to sustainable employment. What is left unexplored in this report is the importance of the country's and each region's economic well-being for the integration of the disadvantaged into the workforce. Although the interest here is literacy policy and assessment, the importance of other educational, social, and economic variables in moving individuals and families into the mainstream of American life should not be ignored. The remainder of this report will be an exploration of the key policy issues raised by these concerns and the types of data that are needed to drive coherent literacy policies.

KEY POLICY ISSUES

THE SKILLS MISMATCH DEBATE

One of the most important policy issues centers on workforce needs. Recent reports have attempted to establish a "labor shortage" or "skills mismatch" perspective of labor market trends. According to this view, the rapid movement away from manufacturing jobs and toward service jobs in the United States is leading and will continue to lead to an equally rapid growth of technical and professional jobs. However, labor force expansion will be dominated by low skill minority workers, thus resulting in a skills mismatch between jobs and available workers (Johnston & Packer, 1987; Mishel & Teixeira, 1991).

At least one major study has challenged this view, projecting that occupational upgrading will slow dramatically in the near future, and that only about one third of the entrants to the labor force in the 1990s will be minorities (Mishel & Teixeira, 1991). According to this analysis, non-Hispanic Whites will comprise two thirds of the entrants. Furthermore, wages for most workers without college degrees fell during the 1980s and remain below their late 1970s levels. Newer jobs with higher skill requirements are not paying wages sufficiently above those jobs with lower skills to rectify this decline in real wages. This report suggests an emphasis on the restructuring of work to improve production system performance, with major attention given to improving the "jobs, pay, and skills of the non college-educated workforce" (p. 3).

Other data published recently show that productivity in the United States is the highest in the world and is increasing at a faster rate than that of any other wealthy nation. In 1990, for example, the average American worker produced $49,600 in goods and services; this was 11.2% higher than the output of the average German worker and 22.4% higher than that of the average Japanese worker. From 1991 to 1992, factory productivity in the United States increased by 4.3% while that of Germany increased by only 0.5% and that of Japan fell by 5.0%. In the service areas America's lead in productivity over Japan and Germany is even wider (Nasar, 1994). Due to these (and other) changes, the United States' share of the world export market is now increasing after many years of decline. Economists project, furthermore, that these trends will not change in the near future, due to reductions already made in costs in both manufacturing and in the service industries.

QUALITY OF AMERICAN EDUCATION

Related to the skills mismatch debate is an assumption, fueled by misinterpretation of NALS outcomes, that large numbers of high school and college graduates have inferior literacy skills. *A Nation at Risk*, issued in 1983, gave the impression that American education was in a state of crisis, that enormous numbers of students were dropping out of school, and that those who remained until graduation seldom acquired the skills needed to survive economically (National Commission, 1983). More recent data either refute or cast considerable doubt on these conclusions. For example, a study by the Sandia Laboratories showed that reported declines in SAT scores were due to a changing mix of students taking these examinations and not to a real reduction in abilities of high school students (Carson, Huelskamp, & Woodall, 1991). More recently, an OECD report has found the American educational system to be among the healthiest in the world (Celis, 1993). Students in the United States score above average in reading comprehension and about average in science. The percentage of the population between the ages of 25 and 64 who hold college degrees (36%) is among the highest in the world and the percentage of women enrolled in colleges and universities is the highest among all OECD countries.

These studies do not invalidate the need for improved literacy training for some high school and college graduates, nor do they dilute the need to provide training for new immigrants who lack English language or other basic skills, but they do call into question claims that vast numbers of U.S. high school and college graduates are in need of literacy training. For policymakers, there is a need to go beyond the gross statistics and simple correlational data to determine who obtains adequate literacy skills from high school or college education and who does not. It is equally important to determine which high schools and colleges are imparting adequate literacy skills and which are not. Some of these data can be extracted from the NALS database, although earnings data are somewhat crude.

TARGET AUDIENCES

If we accept that some people, regardless of number or cause, need further literacy training, then the identification of this target audience for literacy programs becomes an issue. The most prevalent identification technique is to target persons 16 years of age and older who are out of school and still without a high school degree or equivalent. According to the 1990 household census, about 23.7% of all persons out of school and 16 years of age or older, or 45.4 million people, could be placed in this category (Thorne & Fleenor, 1993).

However, this figure inflates the expected demand for literacy instruction because it ignores age and economic circumstances. Among 16- to 24-year-olds, for example, only 11% are out of school and without a high school degree or equivalent while in the 50 and above age level, many more than 24% are without a high school diploma or equivalent. That this older group is not seeking further educational certification can be seen from the GED testing data that show that for 1991, only 8% (64,483 persons) of those who attempted the GED Tests were 40-49 years of age and only 2.8% (22,569) were 50 or older (GED Testing Service, 1992). We do not know how many people in the younger age ranges who are out of school and without a high

school degree are making a satisfactory income, but we suspect that it is not an insignificant number.

Partially counterbalancing these figures are the numbers of individuals with high school and post-secondary degrees who have inadequate literacy skills and who seek further training. According to National Evaluation of Adult Education Programs (NEAEP) Survey, 33% of those who attended ESL, ABE, and ASE classes between mid-April 1991 and mid-April 1992 had a high school diploma or post-secondary degree (Development Associates, Inc., 1993). (However, if the population is restricted to ABE and ASE students, this figure reduces to 11%.)

It is doubtful that any single criterion will completely describe the target audience for literacy programs, given the variation that normally occurs in individual aspirations and in labor skill needs. Basing all of the need upon degree attainment is inadequate for the reasons just given. Similarly, literacy test performance is also an inadequate indicator, not only because of individual and occupation variations, but also because of the complexity of linking literacy test performance to workplace or daily life functioning. This problem is illustrated in Table 1, which shows reported amount of job-related reading of reports, articles, magazines, or journals by persons working in construction crafts. This occupation is 1 of 40 derived from responses to an occupation question on the NALS background questionnaire; data in each cell are based upon population projections for persons 25 years of age or older who were born in the United States or its territories.

Table 1

Percentage and document literacy scale score of projected employees of the construction crafts for reading or using information from reports, articles, magazines, or journals
(N[projected]= 4,431,735)

	Frequency of Reading				
	Everyday	A few times a week	Once a week	Less than once a week	Never
Percentage of employees	13.6	17.2	11.9	25.2	32.3
Mean (s.d.) document literacy	274 (48.9)	282 (45.3)	275 (59.9)	284 (53.2)	252 (62.9)

Note. *The actual number surveyed for each frequency of reading was 74 (Everyday), 90, 64, 137, and 156 (Never).*

What is especially striking is that while almost 31% of the projected workers claimed to read reports, articles, magazines, or journals daily or several times each week, over 32% claimed that they never engage in this type of reading on the job. The distribution of 37% of the projected population across the other two response categories shows that the respondents cannot be divided simply into managerial and manual categories. Furthermore, there is no consistent relationship between mean literacy performance and frequency of job

reading. What is represented here is probably not only a wide diversity of job types under a single definition, but also a large variation within certain jobs, no matter how narrowly defined, in amount of reading required or elected. Although minimal levels of literacy ability might be established for some jobs like these, a vast, foggy middle range of literacy requirements will remain for the majority of the available occupations because literacy is only one of many skills needed for most employment opportunities.

The challenge for policymakers is to differentiate target audiences according to needs and life circumstances so that appropriate programs can be identified. High school dropouts who are still in their teens require a different instructional program than that required by 30- and 40-year-olds who are seeking GED certification or improved skill training for employment. Non-English speaking immigrants who arrive in the United States with minimal education from their native countries will need far more help to become self-sufficient than those who arrive with college or postgraduate degrees. Workers who seek further skills for job advancement require different programs than those who are unemployed and without the basic skills required for entry-level jobs. And those with learning disabilities require more extensive assistance than those who are not confronted with such problems. A bottom level might be established on a literacy assessment for identifying those who need further help regardless of their aspirations or life situations. Similarly, assessments of English language competence might identify those who need further English-language training for ordinary citizenship and for entry-level employment. Beyond these identifiers, however, other data will be needed for identification of specific needs.

WHAT TYPE OF LITERACY TO ASSESS

A consideration of the type of literacy that ought to be assessed rarely enters the policy debate. The basis of NALS as well as most other recent assessments of adult literacy (e.g., APL, Louis Harris and Associates, YALS) was *functional literacy*. Although this term was used by the Civilian Conservation Corps in the 1930s in reference to persons with less than three years of education, *functional literacy* as used in literacy assessments today appears to derive from UNESCO usage in the 1950s (Gray, 1956; UNESCO, 1957). William S. Gray, a leading American educator of the time and America's foremost expert in reading development, authored one of the UNESCO works on worldwide literacy and defined functional literacy in terms of the reading and writing skills needed for functioning in everyday life. Gray defined a functionally literate person as one who possessed the "knowledge and skills in reading and writing...to engage effectively in all those activities in which literacy is normally assumed in his culture or group" (Gray, 1956, p. 24).

The UNESCO/Gray definition, although circular, has been the basis of almost all definitions of functional literacy since the 1950s, but subtle differences have occurred across these formulations. For example, the U.S.

Right-to-Read Program in the 1970s declared that a literate person should be able to "read and understand the whole spectrum of printed materials that one is likely to encounter in daily life," thus eliminating writing from the definition (Carroll & Chall, 1975, p. 8). Statistics Canada, although not employing the term *functional literacy*, implied such in arguing for an empirical and operational definition of literacy. Their definition (1991), "The information processing skills necessary to use the *printed material* commonly encountered at work, at home, and in the community," also leaves out writing but, more importantly, stresses information processing skills (Neice & Adsett, 1991, p. 3).

The YALS and NALS definition, "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential," goes beyond simply functioning in society (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993, p. 2). Deciding what abilities are required to use printed and written materials to function in society is a difficult task and one that has yet to be examined fully. Whether this decision assumes a single adequate level of functioning in society or different levels for different subpopulations, and how this level (or levels) is determined are just two of the questions left unanswered by this definition. Add onto this challenge that of deciding what is required to achieve one's goals and to develop one's knowledge and potential, and one is faced with a Herculean labor beyond that of cleaning the Augean Stables or driving off the Stymphalian Birds. However, since neither YALS nor NALS paid any attention to these components of their definitions, no further attention will be given to them here. From a policy perspective, however, the vagueness in the definition of functional literacy renders evaluation of functional literacy programs nearly impossible.

Functional Versus Other Forms of Literacy

The expected contrast for functional literacy is not non-functional literacy but academic literacy (i.e., the skills and abilities taught in the school literacy programs). These are reflected in the various NAEP reading and writing assessments, which tend to emphasize skills like *critical comprehension* and *reference skills*. But the contrast between functional literacy and most other forms of literacy is not between differing views of what literacy is but between differing interests in basic and applied abilities. Tests like the NAEP Reading and Writing Assessments, as well as school-based tests like the CAT and the CTBS, attempt to evaluate the information processing skills that underlie ordinary reading and writing tasks. These tests ask first, "What do we know or assume about the cognitive processing of texts?" In contrast, NALS asks, "What texts do people use in everyday life and what do they need to do with them?"

Assessments of basic skills can be translated directly into instructional policy; in addition, they can, at least in theory, be used to predict abilities in applied situations. In contrast, functional literacy assessments have no direct instructional implications. What should teachers do, for example, when a high percentage of the adult population scores low on a task requiring the reading of restaurant menus? Introduce more exposure to menus into the curriculum? This may have some logical support but not very much. Extended to its logical conclusion, it would result in a language arts curriculum composed of 12 minutes per day of work on menus, 8 on bank deposit forms, 7 on parts catalogues, 5 on bus schedules, and so on. In Gulliver's Academy of Lagado, this might be desirable, but not in Western education. Even the most severe

critics of American schooling agree that the schools should teach general skills, not vocational applications. The school language arts curriculum desperately needs more emphasis on everyday documents and expository writing, but in the context of critical thinking and problem-solving skills.

A second concern with the functional literacy approach is that it fails to provide a basis for predicting abilities in new literacy contexts. Imagine, for example, that, in five years, literacy demands change dramatically and new types of documents become common. Could we predict how well adults might do on these documents based upon their performance on present-day functional literacy tests? Possibly yes and possibly no, depending upon the processing skills shared by the tested individuals and upon new tasks and documents. Since a functional literacy assessment is not developed from a model of underlying skills, we have no guarantee that any specific skill will be assessed. The skills required by NALS items, for example, are a function of the specific documents and tasks selected. No model or even list of processing skills was created as a basis for item selection. By this method, minor skills may be over represented and important ones ignored.

A third concern is the basis for selecting specific assessment tasks (i.e., the knowledge base for deciding what texts and tasks characterize functioning in society). Although some work has been done on this question, far more work is needed to build a comprehensive survey. If we take YALS and NALS as representations of functional literacy, then a number of problems are immediately apparent. First, in real life, people need to read and understand lengthy texts: a chapter on nutrition for infants, instructions for selecting health insurance coverage, options for college majors, and so on. The longest text to be read in NALS falls far short of these.

In addition, many reading tasks need to be done in a brief amount of time (e.g., reading a flight schedule on the run at an airport to find an alternative flight to the one that was just canceled or evaluating a memorandum handed to you in the course of a working meeting). Many low literate adults can puzzle out such documents given long amounts of time; however, if pressed to do them quickly, they may fail. Studies of reading processes and of reading disabilities have found a consistent pattern of processing speed deficits in disabled and low functioning readers (Bowers & Swanson, 1991; Stanovich, 1986; Wolf, 1991). But speed of processing is not tapped by NALS nor by any other present-day adult literacy test.

Beyond these processing issues are matters of text selectivity. For every person in America who reads Emily Dickinson, probably 100 read the *National Enquirer* and 1000 read the L.L. Bean and J. Crew catalogues. Yet Emily Dickinson's poetry is part of NALS and the *National Enquirer* and the clothes catalogues are not. The NALS also omits lottery tickets, dismissal slips, welfare notices, credit collection demands, and warrants for one's arrest. NALS texts represent a sanitized, upright, and respectful lifestyle—not the underbelly of America that many in the population have to cope with everyday. And the reading habits of those who own second homes at Lake Tahoe, buy toys for their children and grandchildren at F.A.O. Schwartz, and munch on Godiva chocolates are as underrepresented in NALS as are those of people who collect welfare checks each month. There are no items built around limited partnership brochures, Mercedes Benz checkup notices, or American Express Gold Card applications. If a national survey is to tap

the entire spectrum of literacy abilities in America, then the population needs to be stratified by living style and the print-based habits of each stratum examined.

Toward a Theory of Functional Literacy

One resolution of the problems just described is to abandon functional literacy as a basis for national literacy surveys, replacing it with basic skills approaches. This would align adult literacy assessment with K–12 literacy assessment, and therefore provide a continual, lifelong measurement of literacy abilities. As desirable as this might appear in the abstract, it could have undesirable practical consequences. K–12 testing procedures for adults would reinforce K–12 instructional procedures at the adult level, thus continuing a practice that has been unproductive in the past. Adult learning can be distinguished from school-age learning in a variety of ways; however, what is most important is that the majority of the adults in tutoring, in ABE, ASE, and GED programs had unsuccessful experiences in elementary and secondary schools and do not respond well to instructional settings and practices that duplicate these.

In addition, most adults in basic skills and literacy programs have everyday responsibilities that keep them focused on the here and now—jobs to find and maintain, children to raise, rent and utility bills to pay, and so on. Although intellectual enrichment is desired for everyone, coping with daily needs is a prior necessity for most adults. Functional literacy, by definition, provides a focus on practical matters associated with print. It has an ecological validity that is obvious to most who encounter it in assessments and in instruction.

Therefore, rather than abandoning functional literacy, an attempt should be made to support it both theoretically and empirically. The first step in doing this has already been suggested—stratify the population by living style or whatever other variables might be relevant for classifying social functioning and then define the print-related habits of each stratum. This will produce a pool of texts and tasks for building an assessment. Most functional assessments since the 1970s have done something approaching this but then have failed to analyze the resulting pool to understand the underlying demands of each text-task pair. Instead, surveys were built on matrix sampling of the resulting pool. A more adequate survey could be built if the processing demands of each text-task pair were defined within the framework of a specified cognitive processing model and these processing demands formed the basis of selection from the pool. In this way, everyday literacy tasks would still be used, but they would be grounded in a theory of cognitive processing that would guide interpretation of the results. Clusters of items would represent different cognitive processes, thus allowing reporting not only of abilities on specific tasks, as is done now, but also reporting of specific information processing skills.

This approach should also lead to a reinterpretation of the scales for surveys like NALS. The present division into prose, document, and quantitative scales has little empirical or theoretical support. It is questionable, for example, whether the quantitative scale adds any value to the survey beyond that of the other two scales. It is not an assessment of adult quantitative abilities per se and therefore could not (and should not) be used for decisions about mathematics ability. With the importance of quantitative ability today for work and home life,

national survey of adult quantitative ability is needed, built on solid mathematical principles.

[illegible] made to analyze the YALS and NALS items [illegible] ems about processing stages (Kirsch & Mosenthal, [illegible]isley, 1990). These are a step in the right direction but [illegible] current work on problem solving. The variables that [illegible] for understanding NALS-like items include problem [illegible] of information, working memory load, solution [illegible]. But a theoretical model for functional literacy needs to be [illegible] variety of functional literacy tasks rather than from the [illegible] typically selected for literacy surveys.

[illegible] exactly what dimensions functional literacy scales [illegible] If scales are to be formed strictly from text types, then [illegible] full continuous texts (narrative fiction, expository [illegible], reduced texts (advertisements, admission tickets, [illegible] prescription labels, etc.), tabular displays (lists, [illegible] schedules, indexes, tables of contents, etc.), and labels [illegible] on maps, diagrams, signs, etc.). This approach is [illegible] by the existence of a large number of texts composed [illegible] text types. A dictionary, for example, has both full [illegible], some clothing catalogues have both full texts and tabular displays.

[illegible] other hand, claims of independent latent traits are to be made [illegible] demands need to be considered. At present, we [illegible] on the relative contributions of text types and task [illegible] difficulty. It is obvious from the spread of scores on [illegible] that are based on the same text that task demands [illegible], but NALS has mainly brief texts. As text length [illegible] may make an increasingly large contribution to item difficulty.

[illegible] to remain as the foundation for national surveys [illegible] the basis for adult literacy instruction, then considerable [illegible] defining more precisely the theoretical foundation [illegible] considerable research is needed to improve the selection [illegible] of assessment items. NALS and LSUDA are clear [illegible] progress has been made since the 1950s in [illegible] assessments. This success, however, should [illegible] to be done. A national survey should not only [illegible] the skill potential of the nation, it should do so in a [illegible] educational implications.

[illegible] ments over the past 30 years have created a [illegible] training. On one hand, employers are looking [illegible], functional skills: operate a specific piece of [illegible] certain types of documents, do specified types of [illegible]. On the other hand, workers can expect to change jobs [illegible] 20 years ago, and, even within the same job, skills [illegible]. New approaches to work organization wherein [illegible] wide range of job responsibilities, new manufacturing [illegible] rapidly, and decreased job security all favor

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workers with solid basic skills rather than narrow, functional training. Somehow the best of both the functional and the basic skills worlds needs to be taught to under-skilled adults. Perhaps a principled functional literacy approach can do this.

THE EFFECTIVENESS ASSUMPTION

An assumption of most literacy policies is that if adults could only be persuaded to attend adult basic education programs, or other types of literacy instruction, they would acquire the skills they are presumed to lack. This assumption is relatively untested. We know little about the effectiveness of different literacy programs and have limited experience in measuring literacy program performance (Darkenwald, 1986).

Most carefully controlled studies of program effectiveness done over the past five years have reported either ambiguous or negative findings. In one of the largest of such studies, Manpower Demonstration Research Corporation reported recently on the effectiveness of the New Chance Program, which enrolled 1,408 teenage mothers in 10 states in literacy, job training, and life skills classes (DeParle, 1994). After 18 months, program participants had the same welfare and employment rates as a matched control group that received no training or other social services. Only small increases in parenting and literacy skills were found, and about 57% of the women in the program got pregnant in the 18 month period, compared to 53% of the control group women.

A study of 825 parents who received literacy instruction in Even Start programs reported small but educationally insignificant increases in literacy ability after 40 or more hours of instruction. Similarly, a study of 92 adults in ABE and ASE programs in New York State found contradictory evidence for reading gains after eight months of instruction. Changes in performance on functional literacy, reading comprehension, mathematics, and vocabulary measures showed a range of outcomes from a gain of about 0.4 standard deviations to a loss of about 0.25 standard deviations, depending upon the test used (Venezky, Bristow, & Sabatini, in press).

Finally, the New York City data mentioned earlier showed a gain of 9.9 months in reading ability for the first year of instruction, but only 3.3 months for the second year of instruction, and 3.0 for the third year, with a mean of 212.4 contact hours per year (Literacy Assistance Center, 1992). At this rate, a person who enters a program reading at a beginning sixth-grade level can expect to advance only to a mid seventh-grade level after three years of course work.

Although these averages do not reveal how many persons do make meaningful gains as a result of literacy instruction, the general lack of significant advances across programs has serious implications for policymakers. Should adults who are performing below a mid high school level be encouraged to take academically oriented basic skills programs? Is GED certification a reachable goal for a majority of the adults who enroll in literacy programs?

One assessment goal should be to identify the conditions under which adults make meaningful gains in literacy programs. At present, we have almost no good estimators of the progress adults will make in literacy programs. We do not know if the variance in literacy outcomes from instruction is due to quality of instruction, amount of out-of-class reading, attendance patterns, intelligence, or any other variable or set of variables.

Almost all program output measures are of academic skills, yet most researchers agree that attitudes and beliefs also deserve attention. Even the roles of some types of programs are in doubt. Library tutoring programs, for example, usually provide services to adults at the lowest ability levels, using relatively untrained volunteers for tutors. Do we expect appreciable literacy skill gains from such programs or do we expect more confidence building and life skill acquisition? To what degree should these programs prepare and encourage adults to attend ABE classes?

Another assumption is that adults who acquire whatever is being taught in literacy programs will be better equipped for high-skilled jobs in the labor market, will function better as parents and home managers, and will participate more fully in civic and community affairs. Once again data are too limited to draw strong conclusions; nevertheless, several recent reports raise doubts about the effectiveness of job training or retaining programs. The MDRC study described above documents one instance of a lack of positive outcomes (DeParle, 1994). A similar study, done internally by the Department of Labor, concerning government-sponsored job retraining programs, found even more dismal results. Of 1,198 workers in 9 states who received job retraining, only about 19% found jobs within a year of completing the program that drew upon their training and paid 80% or more of their previous wages. The Labor Department report on the study concluded that the job training program was "largely ineffective and used primarily as an income crutch for the unemployed" (Kilborn, 1993, p. A1).

Further complicating evaluation of program effectiveness is the open entry/open exit policy incorporated into most literacy programs, with students defining their own goals. Although this policy may be successful in encouraging adults to attend programs where they might not be comfortable under different operating procedures, it does not ensure that adults will be striving for the levels of literacy that they need and could attain. Adults with low literacy levels tend to lack confidence in their own abilities to learn. Without assistance in defining what their needs might be, they may aim for far less than what is necessary for their own success.

More serious is the lack of basic understanding of the literacy demands of home and civic functioning. We assume, for example, that one goal of literacy instruction is to improve parenting skills, particularly for fostering the literacy development of children, yet we have only crude estimates of the amounts and types of reading, writing, and mathematics that are required to succeed at this task. Like most of the other goals of literacy instruction, parenting is dependent upon much more than literacy. In some cases, literacy is only a proxy for some complex of skills and may not be necessary, given compensating conditions. For example, many immigrant and refugee parents in America who are not literate in English are nevertheless quite effective in fostering their children's education in English-speaking classrooms (Caplan, Choy, & Whitmore, 1992).

THE ROLE OF TESTING

Given the questions raised about the justification for federal expenditures for literacy instruction, in defining the target audience for such funding, in deciding on what type of literacy to assess, and in demonstrating effectiveness of literacy programs, the need for an extensive database to support literacy policy becomes imperative. In recent years, strong steps have been taken in a few countries toward this goal. These have included not only national surveys of literacy performance (e.g., LSUDA, NALS), but also surveys of federally funded programs and their clients (Development Associates, Inc., 1993), analyses of decennial census data for literacy needs (Thorne & Fleenor, 1993), and evaluations of specific literacy program (DeParle, 1994). Because of the progress made in these surveys and evaluations, we are in a better position now than ever before to reflect on the types of data collected and their role in policy formation. In this section, several issues are raised about specific types of literacy assessments. In the concluding section, further needs for literacy policy formation and evaluation are presented and recommendations for data gathering are made.

POPULATION ASSESSMENTS

National and state surveys of literacy involve two types of data collection: background information, generally gathered orally, on educational, economic, health, language, and civic activities and experiences; and skill abilities as measured by some nationally standardized instrument. As discussed above, tests of functional abilities have been favored since the early 1970s for population surveys of adult literacy. These tests tend to have a high face validity for adults because they draw their items from everyday literacy tasks that are familiar to most English-speaking adults. The most recent population surveys, the Young Adult Literacy Survey (YALS; Kirsch & Jungeblut, 1986), the National Adult Literacy Survey (NALS), and the Canadian National Survey (LSUDA), were constructed around short answer responses to everyday reading tasks. Although some arithmetic ability is required in one set of tasks and some responses require writing, no systematic attempt is made to assess these skill domains. In addition, both skills are so embedded within reading contexts that it is not always possible to determine where an item difficulty rests.

In contrast, national surveys of elementary and secondary level literacy abilities are based upon basic reading, writing, and mathematical skill definition (e.g., the National Assessment of Educational Progress or NAEP). Although the YALS included a small group of items drawn from the NAEP reading assessment for linkage purposes, the two types of surveys differ sufficiently to make them noncomparable. That is, one can determine how well a young adult might do on the NAEP reading scale, based upon responses to the NAEP items in the YALS, but one cannot, from these data, equate scores on the NAEP reading assessment with scores on the YALS document, quantitative, or prose scales. This incompatibility between the NAEP reading assessment and the YALS (and NALS) impedes longitudinal analyses of functiona! literacy abilities. For example, reading scores from the NAEP high school reading tests

cannot be compared to functional literacy scores from the same individuals, obtained in the years after leaving high school.

Skills Assessments

Most tests used for pre- and posttesting of adult skill abilities in literacy programs have been basic skills tests, most often developed from similar tests for children. A typical adult reading test, for example, will test various types of comprehension (e.g., literal, inferential, and critical), plus vocabulary and perhaps structural analysis (e.g., prefixes and suffixes). Many of these tests report scores in grade-level equivalents, although other reporting procedures are possible. Grade-level equivalents are questionable scalings for elementary- and secondary-level assessment; for adults they are even more problematic (Kirsch & Guthrie, 1978; Ryan & Furlong, 1975; Sticht, 1988). A sixth grader who reads at a sixth-grade level and an adult who reads at a sixth-grade level usually have widely different reading abilities and require different forms of instruction, yet by grade-level measures they are classed as identical. In addition, grade-level designations for adults are misleading in that they assume the average experiential and background knowledge levels of children at the designated grade points. Although no widely accepted alternative scaling for adult abilities has yet been developed, the need for such a replacement is great.

If functional literacy tests were simply alternative means for tapping the same skills as those assessed by basic skills tests, the two could be equated. However, for adults in ABE programs, the correlation between the document scale of the Test of Adult Literacy Skills (TALS; Simon & Schuster, 1990) and the reading comprehension scale of the Tests of Adult Basic Education (TABE; CTB/McGraw-Hill, 1987) is less than .70. A regression analysis found that the best predictor of document scale performance on the TALS was the TABE Mathematical Concepts and Applications; the TABE Reading Comprehension scores also made a significant but far smaller contribution to the predicted scores (Sabatini, Venezky, & Bristow, 1995). Functional literacy tests like the TALS require not only general reading comprehension, but also problem-solving abilities.

The incompatibility between basic skills tests and national literacy surveys places a special burden on policymakers. The NALS results are not compatible with scores reported by literacy programs that use basic skills tests, and, while NALS scores could be converted to a crude grade-level equivalency, this would have little validity in that most of the NALS tasks are not taught extensively in school. Furthermore, the scores would still not be any more comparable than math and reading scores that were mapped onto grade-level scales.

Program Evaluation

One reason for administering formal tests at the beginning of an instructional program is to meet reporting requirements for student progress and program outcomes. Typically, basic skills gain scores are reported. There are many problems with this, and the results, as currently reported, have relatively limited use for policymakers. First, the pretest scores are based on a test that is generally administered within the first week that an adult has enrolled in a program. For many adults, this is the first encounter

with formal testing since dropping out of high school (or grade school). Scores tend, therefore, to be artificially low: Adults lack test-taking skills, have low self-confidence, and lack practice with some literacy skills. After even a few weeks in class, scores may rise significantly due simply to exposure to test formats, printed vocabulary, and the like. In the data cited above from New York City literacy programs, it is doubtful that the 9.9 months average gain reported for the first year of instruction represents a true increase in reading ability as opposed to a mixture of improved reading ability and improved test-taking strategies.

Second, almost all test score reporting is for reading comprehension, yet most ABE courses stress a variety of skills, including basic mathematics, reading vocabulary and comprehension, and writing, as well as specific life skills (applying for a job, interacting with your child's school, etc.). This means an incomplete match between course content and test content. Part of the problem with current practices is that ABE programs are attempting to serve two distinct goals. One is to prepare adults who have not had the advantages of formal education or did not make sufficient progress in a formal educational system to cope effectively in a print-based society. This path might lead to GED certification and, for some, to community college or a four-year institution. The second goal is to give adults the practical skills they need for self-esteem, work, home, and civic needs. In this path, less attention is given to academic skills, which means less time for theories and other abstractions. (For a discussion of functional vs. general or academic literacy instruction, see Sticht, 1987).

For evaluation of progress, several procedures should be considered. For academic programs, it is important to know how many students eventually reach their academic goals (GED certification, college, etc.) and in how much time. This information would allow policymakers to determine the overall effectiveness of the system as well as the relative effectiveness of different programs in helping students reach their academic goals. The GED examination and college entry requirements generally serve as checks on actual skill attainment, although with open admissions, it may also be important to track progress within post-secondary education.

Students enrolled in courses that stress practical skills could be assessed at the termination of their instruction with functional literacy tests. To measure actual progress, posttest scores might be compared to scores obtained after a month or so of enrollment. But we have little agreement on what average gains to expect for different entry-level abilities and instructional regimens, and gain scores do not translate easily into policy. A gain of 50 points on the TALS document scale, for example, might be a positive sign for someone who entered a program with low reading ability and re-enrolled for the next higher level of instruction. For a person who entered with the same low level of ability and planned not to proceed to the next level, this may not be a positive sign, particularly if the exit level of functioning were still too low to ensure adequate handling of print material for home, work, and civic life.

An alternative is to report a combination of exit scores and enrollment statistics, including the percentage of students who enroll in the next higher level course, when one is available. This approach requires further work, however, on matching functional literacy scores with levels of functioning in society. What policymakers need to know, for those who enroll in literacy courses, is how many stay long enough to reach desired levels of functioning.

At present, many students who enroll do so on a casual basis, attending sporadically and often leaving without formally withdrawing.

Another complication to consider is the curriculum-assessment mismatch discussed above. For efficiency, we would like to have assessment instruments that could inform instruction as well as policy. However, this may not be possible. Intelligent policy requires data comparable across time and geographic region. Furthermore, policy-related results must be interpretable in relation to societal goals. Students who enroll in literacy courses to learn how to read to their children may not care at the end of instruction what their reading levels are relative to national standards. However, policymakers do. One option is to divide students according to their expressed goals into general literacy students and specialized skill (or functional literacy) students. Then, only the former would be tested with nationally standardized instruments. The latter group might not be assessed at all or be assessed through alternative means. A second option is to require that all students be tested on exit with nationally standardized instruments as a condition of enrollment. This by itself, however, will not solve the problem created by those who drop out before exit testing.

Score Reporting

As stated earlier, grade-level reporting for test scores needs to be reconsidered. If it is an adequate scale for reporting adult abilities, then it needs to be justified both empirically and logically. If not, then a scale (or scales) that applies more directly to adult functioning levels needs to be developed. Such a scale might be developed around materials and tasks that represent different levels of functioning in work, home, and civic life. Alternatively, the scale might be built around knowledge of cognitive processing, the skills and strategies required for different levels of ability. A sufficient base already exists for initiating work on the latter. Studies of word identification reaction times, decoding, reading flexibility, and metacognition, in particular, provide insights into some of the cognitive skills required for reading (e.g., Perfetti, 1985; Stanovich & West, 1989; Vellutino & Scanlon, 1987). A targeted research program could pursue these and other leads with adults, not just for reading but also for writing.

The differences between these two approaches to the development of an alternative literacy scale for adults should be subjected to critical examination. The materials and tasks approach will be easier to relate to home, work, and civic functioning; the cognitive processing approach will be easier to relate to elementary and secondary assessment and to instruction. The former will need to be re-evaluated as the literacy demands of everyday life change, while the latter will require an additional step to relate it to everyday literacy demands.

TOWARD A MORE FOCUSED DATABASE

Perhaps the most important lesson to be learned from national literacy surveys is that they have limitations for policy formation and evaluation. This is not to invalidate what are clearly important contributions toward an understanding of the distribution of literacy skills in a population, but rather to recognize the complexity of the problem that is faced. What is needed in most developed countries is not further information on literacy in the total population, but more focused information on the groups who need assistance and the effectiveness of programs instituted to assist them. The continued practice of aggregating disparate needs under the literacy banner disguises the vast differences across the individuals and groups involved.

The settlement and integration of immigrants and refugees, for example, potentially requires language and cultural instruction, along with skill training for jobs. Policy evaluation for this population must attend to the initial support system provided, the effectiveness of second language and culture instruction, the matching of skill training to available jobs; and the progress of families toward economic independence, educational advancement, and citizenship.

For the native-born with low literacy and job skills, different policies are needed, oriented toward the specific life situations of the individuals involved. Policy for young mothers on welfare who are high school dropouts, for example, might be focused on completion of high school since modeling of educational alternatives shows distinct long-term economic advantages for this alternative over GED certification. For policy evaluation, data would then be needed on program types, enrollments, educational progress, and longer term job attainment and earnings. Similar data are needed on inmates of correctional institutions, with recidivism monitoring, and on other groups, with consideration of their special needs.

Evaluation of program effectiveness is probably the most serious issue faced by literacy policymakers, yet limited scholarly attention is devoted to this issue. What is usually discussed, furthermore, is evaluation of particular programs instead of evaluation of policy options. More attention needs to be devoted to modeling of policy options, with assessment and evaluation designed to validate the accuracy of predictions. If policy options became the focus of literacy evaluation, then a serious flaw in the present system would become obvious, this being the lack of connectivity between literacy programs and policy objectives. At present, the United States has a number of disjointed systems for assisting the poor, indigent, immigrants, and the like. Each system or set of programs has an ostensible goal of assisting people to become independent citizens, economically self-sustaining. The literacy component, however, is seldom viewed in terms of its contribution to this goal. Instead, it has become an end unto itself.

Arbitrary gains in literacy ability are sometimes set as objectives for programs, without regard for either what is reasonable to expect for the student

population involved or necessary for the goals of the program. Data collection for adult literacy has taken on a similar static and disjointed approach. We collect data on numbers of people in programs, on literacy abilities in the population, on average length of attendance in programs, and more, yet we seldom question what these data mean about literacy policy, and we rarely motivate data collection by specific policy issues. Most data collected on adult literacy are justified by a general academic interest in knowing, not by a specific need for policy evaluation.

To construct a better knowledge base for literacy policy formation and evaluation, we must first clarify policy objectives in relation to individual outcomes. How, for example, is ABE, ESL, and ASE funding to lead to economic independence for specific populations? Where do welfare support and job training fit into the total system? What are our expectations for the yearly progress of specific subpopulations like high school dropouts? How is the system coupled to local and regional job markets? How do we ensure that individuals are being prepared for jobs that will exist when they are ready to enter the job market? Many technical and vocational colleges have advisory boards for trades so that current information on skill needs and job potential is incorporated into admissions and curriculum. A similar relationship between occupations and training is needed for literacy programs.

Once we decide on the most likely routes for moving individuals with low skills and limited economic potential to economic independence, we must then design data-gathering for monitoring the progress of people who move along each path. Then, we should no longer ask whether or not participants in ABE programs are making a grade-level of progress for each year enrolled or what the document literacy is of high school graduates. Instead, we should ask what percentage of the individuals who began training in a particular year progressed as expected toward employment, whether the skills taught in particular literacy programs matched those needed for local jobs and for social and family needs, and whether the supply of literacy programs matched the demand within a community or region. As long as our only goal is to raise literacy levels independent of specific needs, assessment will serve mainly to feed vast storehouses of data that will lie in cluttered obscurity around the countryside like decaying old gas stations along roads no longer taken, justified by a solitary burst of publicity at release time and forgotten soon after.

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